

Docket No.: 0756-1441

IN THE CLAIMS:

Please amend claims 1 and 5 as follows:

sub. 1/14
E 7

1. (Twice Amended) A device for [reading an image] sensing a light comprising:

a semiconductor layer formed on a substrate, said semiconductor layer comprising [an image] a light sensor region and a semiconductor switch region adjacent to and operatively connected with said [image] light sensor region,

wherein [said semiconductor layer has a] [semi-amorphous][structure comprising a mixture of amorphous and crystalline structures, in which] a Raman spectrum of the semiconductor (film) exhibits a peak deviated from that which stands for a single crystal of the semiconductor. layer

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5. (Twice Amended) A device for [reading an image] sensing a light produced by a process comprising the steps of:

depositing a semiconductor material on a substrate;

forming a photoelectric conversion semiconductor device on said substrate comprising a p-type impurity semiconductor region, an intrinsic semiconductor region, and an n-type impurity semiconductor region, a semiconductor region of said photoelectric conversion semiconductor device being made of said semiconductor material; and

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Pub. ~~App.~~ ~~Chd.~~
[]
cont
forming a thin film transistor on said substrate which constitutes an electric circuit required to [read an image] drive said photoelectric conversion semiconductor device, a semiconductor region of said thin film transistor being made of said semiconductor material;

wherein said semiconductor regions are arranged in order with said p-type impurity semiconductor region adjacent said intrinsic semiconductor region and said intrinsic semiconductor region adjacent said n-type impurity semiconductor region in said photoelectric conversion semiconductor device, said order being in a direction perpendicular to that in which [an image] a light to be [read] sensed is incident thereon.

Please add new claims 15-30 as follows:

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15. A device for reading an image comprising:

a semiconductor layer formed on a substrate, said semiconductor layer comprising an image sensor region and a semiconductor switch region adjacent to and operatively connected with said image sensor region.

wherein said semiconductor layer has a semi-amorphous structure comprising a mixture of amorphous and crystalline structures, in which a Raman spectrum of the semiconductor film exhibits a peak deviated from that which stands for a single crystal of the semiconductor.

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I 12

16. The device of claim 15 wherein said semiconductor layer comprises hydrogen doped silicon.

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17. The device of claim 15 wherein said semiconductor switch region comprises a thin film transistor of which active region is formed of said semiconductor layer.

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contSUB
I 14

18. The device of claim 15 wherein said image sensor region comprises at least two semiconductor regions having different electrical properties and forming a junction.

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19. A device for reading an image produced by a process comprising the steps
depositing a semiconductor material on a substrate;
forming a photoelectric conversion semiconductor device on said substrate
comprising a p-type impurity semiconductor region, an intrinsic semiconductor region, and
an n-type impurity semiconductor region, a semiconductor region of said photoelectric
conversion semiconductor device being made of said semiconductor material; and

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said*

forming a thin film transistor on said substrate which constitutes an electric circuit required to read an image, a semiconductor region of said thin film transistor being made of said semiconductor material:

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wherein said semiconductor regions are arranged in order with said p-type impurity semiconductor region adjacent said intrinsic semiconductor region and said intrinsic semiconductor region adjacent said n-type impurity semiconductor region in said photoelectric conversion semiconductor device, said order being in a direction perpendicular to that in which an image to be read is incident thereon.

20. The device of claim 19 wherein said two semiconductor regions of the image light sensor region are laterally arranged on said substrate.

21. The device of claim 19 wherein said photoelectric conversion semiconductor device further comprises an amorphous semiconductor film provided on a side of said intrinsic semiconductor region on which said image is incident through said amorphous semiconductor film.

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22. A device for reading an image comprising:
a semiconductor layer formed on a substrate, said semiconductor layer

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cont

comprising an image sensor region and a semiconductor switch region adjacent to and operatively connected with said image sensor region.

wherein said semiconductor layer has at least one of an electron mobility 15-100 cm²/V sec and a hole mobility 10-100 cm²/V sec.

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I 14

23. A device for reading an image comprising:

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a semiconductor layer formed on a substrate, said semiconductor layer comprising an image sensor region and a semiconductor switch region adjacent to and operatively connected with said image sensor region.

wherein said semiconductor layer has a semi-amorphous structure in which a Raman spectrum of the semiconductor film exhibits a peak deviated from that which stands for a single crystal of the semiconductor, and said semiconductor switch region comprises complementary p-channel and n-channel thin film transistors.

24. The device of claim 23 wherein said semiconductor film comprises hydrogen doped silicon.

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I 19

25. The device of claim 23 wherein said image sensor region comprises at least two semiconductor regions having different electrical properties and forming a junction.

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26. The device of claim 25 wherein said two semiconductor regions in said image sensor region are arranged in a lateral direction on said substrate.

27. The device of claim 23 wherein said semiconductor layer has at least one of an electron mobility in a range from 15 to 100 cm²/V sec and a hole mobility in a range from 10 to 100 cm²/V sec.

28. The device of claim 15 wherein said semiconductor layer has at least one of an electron mobility in a range from 15 to 100 cm²/V sec and a hole mobility in a range from 10 to 100 cm²/V sec.

29. A device for sensing a light comprising:
a semiconductor layer formed on a substrate, said semiconductor layer comprising a light sensor region and a semiconductor switch region adjacent to and operatively connected with said light sensor region,
wherein said semiconductor layer has at least one of an electron mobility greater than 15 cm²/Vsec and a hole mobility greater than 10 cm²/Vsec.